- stone ttt
  - Factors
    - surgeon
      - skills
      - instruments
    - patient
      - general fitness
      - preference
    - stone(s3nl)
      - site
        - kidney
          - lower calyx
            - ESWL
              - controversal
                - angle of calyx
                - dylated or not
                - neck
                  - narrow
                  - long
              - no ESWL
                - med. & lower
                - upper 1/3
                - ureter
              - no medical
                - Avulsion
                - use forceps
                - or desntig. in situ
                - no dormia
      - size
        - smooth
        - spiky
      - shape
      - No.
        - multi
        - no medical
      - laterality
        - uni
        - bilat.
        - worest
    - UT
      - patency
      - other path.
        - tumour
        - افتح بالمرة
  - which 1st
    - surgeon prefrence
    - more painful
    - infected
    - obstructed
  - medical
    - when
      - patent distally
      - ∠6-8ml
      - smooth
      - not OFK
      - not multi.
      - can tolerate
    - hydration
    - ↓salt intake
    - include
      - thiazides
      - resin
      - citrate
      - MG
  - Endoscopic
    - Extraction
      - 7-8ml
    - disentegration
      - .08-1.5cm
      - types
        - U/S
        - electrolytic
        - pneumatic
        - laser
        - lapaxy
          - mechanical
          - only in bladder
          - minimally used
  - ESWL
    - criteria
      - ∠3 stones
      - burden <2cm
      - no distal obst.
      - not in
        - middle 1/3
        - lower1/3
        - ureter
      - not dense (compare to bone)
    - contraindication
      - F. to stone
        - burden>2cm
        - dense
        - lower calycx (not contraind.)
      - F. to patient
        - b leeding tend.
        - Pregnant
        - pacemaker
        - UTI infection
        - large aorte aneu.
        - obese >120kg
        - bad Condition
      - others
        - other patho.
        - distal obstruction
      - absolute
        - pregnant
        - distal ob.
        - bleeding
        - cr. >3
    - comp.
      - R. to stone
        - R.colic
        - stein strasse
        - failed
        - incomp. disent.
      - R. to shock W.
        - bruises
        - preneph. hematoma
        - hematonephrosis
        - hematourea
        - flare infection
        - pancraetitis
      - medical ttt
        - PCN
        - urtroscopy
  - laproscopy
  - open surgery
    - large >2cm
    - special stones
      - staghorn
      - kidney
      - jack
      - bladder
    - associated path.
      - in diverticulum